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Garden and Forest.

Among the contents of next week's issue (No. 152) will be the following articles:

Widening the Drives in Central Park.
Editorial.

General Grant's Tomb. (Illustrated.)

Viburnum molle. (With figure.)
By PROFESSOR SARGENT.

The Cultivation of Native Orchids.
By F. H. HORSFORD.

The paper will contain an illustration of the ground plan of General Grant's tomb, with views of it from the river and from the north, and a figure of Viburnum molle, from a drawing by Mr. C. E. FAXON.

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The National Forest-question.

THE perusal of the last annual report of the Secretary of the Interior must make it apparent even to persons little familiar with the forest-conditions which prevail in the western half of this continent that the nation's great forest-inheritance is in serious danger, and that the resources now at the command of the department are entirely inadequate to protect it. How inadequate these are and how great has become the lawlessness engendered by the way offenses against forest-property have always been condoned in this country, appear in the fact reported by the Secretary that the Canadians have actually invaded the territory of the United States at the point where the Rainy River forms the northern boundary of Minnesota for the purpose of cutting and carrying away timber growing on our public domain. Roads have been built into the forest here and a fleet of steamboats equipped to tow the plundered logs to Canadian mills. This is not a more striking instance of the inability of the Government to cope with the dangers which menace our national forests than a dozen others which might be mentioned. Indeed, during the last twenty years the forests of the public domain have been systematically robbed in Minnesota, in Colorado, in California, in New Mexico, and in every state and territory where profit was to be made by manufacturing stolen lumber. This illicit industry has developed populous towns; it has floated ships and equipped mills; and it has ruined and demoralized entire communities who have learned to forget in the looseness of the American principle of forest-management that there was as great a moral offense in stealing a tree from the public domain as in stealing a neighbor's horse. The Government, and not the people, are to blame for the present attitude of the country toward the nation's forests; and the whole theory under which the western lands have been managed is wrong and demoralizing. It may have been perhaps good policy once to give farming-land to settlers at nominal prices, although now that the best land is taken up, the time for doing this has certainly passed; and it is clearly good business for the Government to sell its lands for what they are actually worth in the market.

The conveyance of agricultural land to the settler has always been guarded by law, or, at least, by a semblance of law, and although the system is open to many serious objections, it has had at least the advantage of filling up rapidly large territories. But in the case of the forest other problems have to be met. It was long the principle to allow settlers to cut without restriction such timber as they needed for domestic and agricultural purposes from rough, stony land unfit for farming. Mining companies were allowed to cut all the timber and fuel they needed from the public forests, and railroads were given the same privilege. When men are allowed to go out and cut the timber they need upon land which does not belong to them, they will not be particularly careful how much is cut or how the work is done, and the limit set by personal needs will not always be regarded. Lawlessness and utter disregard of forest-property must be the inevitable result of such a system. The authority given to settlers to supply themselves with timber in this way was taken away some years ago; but now the Commissioner of the General Land Office recommends the enactment of a law repealing statutes forbidding the entry of rugged, stony or other timber-lands unfit for cultivation except under the mining or town-site laws; and allowing settlers to use the timber on such lands which they may actually need to develop the country.

The enactment of such a law as the Commissioner recommends seems to us dangerous and a menace to the best interests of the country. The forests in all the western country, with the exception of those which clothe the shores of Puget Sound, may be divided into two classes; those of the high mountain ranges composed of large and often valuable trees, and those on the rugged and stony land of the lower mountain-slopes and foot-hills. It is from these last, if we understand the purpose of the Commissioner, that the people living in the valleys are to be allowed to cut without control or supervision what timber they require to carry on their farming operations. All these foot-hill forests are stunted and unproductive in comparison with the forests which grow high above them on the mountains; the trees are small and stand at considerable distances apart, and the wood they yield is brittle, crooked and full of knots. To a person accustomed to the forests of Maine or Michigan or Oregon these foot-hill forests must appear worthless and their destruction a matter of no importance. Actually, however, they are as valuable as the forests of any other part of the country. It is their proximity to arable land which makes them valuable, not the character of the timber they can supply. They contain the most available, practically the only, fuel-supply and fencing material for many valleys. When they are destroyed the cost of living on the farms in their neighborhood will be immensely increased, and in some valleys agriculture will not be possible without these forests to draw upon. They are unproductive because the climate in which they grow is not suitable to develop a heavy forest; and if they are cut down or burned they will reproduce themselves very slowly, or not at all. They require, therefore, more careful management than forests growing under more favorable conditions, and unless they are cut systematically, and guarded in every possible way, they will soon disappear not to spring up again.

It is proper that farmers in western valleys should get the advantage which comes from living in the neighborhood of a forest, but they should be compelled to purchase the fee of the forest-land from the Government if they are bound to destroy the forests, or the Government should itself hold such forest-property for the benefit of the whole community, and so manage it that the whole community will get the greatest possible returns from it. This is what Government forest-management means—the care of the forest for the good of all.

The American system, which allows settlers or corporations to go into the forests and help themselves and then

burn up what is left, saves a great deal of trouble; and the settlers and the corporations like it and are prepared to fight for its continuation. It is, however, an expensive method in the long run, and it can have but one ending—the injury and finally the agricultural ruin of the region where it is practiced.

It appears that 310 cases of trespass on the public forests, involving a loss to the Government of more than three millions of dollars, were reported during the year, although only about a hundred thousand dollars were collected by the Government for losses sustained by the illegal cutting of timber. There are, however, still unsettled claims of this sort for nearly fifteen millions of dollars, from which, probably, a small percentage will in time be collected. But trespasses of this sort do comparatively small damage to the national forest. Their greatest enemies are fire and pasturage. As compared with the damage inflicted by these, the cutting down of a few thousand acres of timber more or less amounts to little. The pasturage of sheep on the Calfornia Sierras has already inflicted untold injury to the finest coniferous forests in the world; and fires in the western forests seem to be increasing rather than diminishing every year. They are most frequent and most severe in the dry interior region of the continent, where forests are scanty from climatic causes, and where once destroyed they reappear slowly, or not at all. It is evident that any effort to preserve the forests from illegal pasturage will be resisted in the most violent manner by the people of California, and that the spread of forest-fires can only be checked by determined effort of the Government. Apparently it can be accomplished only by the free use of the army as a forest-police, as we have already insisted.

The attention devoted to the forest-question by the Commissioner of the General Land Office and by the Secretary of the Interior in their last annual report shows that the public begins at least to realize the importance of doing something to protect the national forests. This is in itself hopeful; recommendations are not actions, however, and the outlook in Congress for immediate action in the direction of a national forest-system is not encouraging.

The Pines at Christmas-time.

TWO days before Christmas, while walking among the Pines in search of decorative evergreens, I found several Golden-rods in bloom. They were growing where a new road had been cut through a swamp. The road was narrow, and the thick growth of underbrush and trees on either side somewhat sheltered and protected them. It was the fine thick-leaved species *Solidago sempervirens*. The road had been made during the summer and autumn, consequently the plants had been cut back or trampled down, and as soon as left to themselves they began to throw up flower stems, and although the mercury had gone as low as twenty above zero, yet here they stood, defying the cold, in different stages of growth. Some just starting to send up flower-stalks, others fully developed and not looking much the worse for the freezing. The foliage was specially fine.

Among other Christmas treasures we gathered Holly, Mistletoe, Laurel, and the rich purple, fragrant leaves of the Wax Myrtle, and the large, thick, shining leaves of Magnolia, which have a spicy odor in winter more marked than in summer. And we added the Inkberry as well as the bright scarlet berries of the Black Alder or Winterberry, and long trailing sprays of Smilax covered with clusters of purplish fruit. Small branches of Cedar full of dull bluish berry-like little cones were gathered, and with them boughs of Pine, with its delicious invigorating fragrance. There is nothing more handsome for winter decoration than small branches of Pine, its matted bunches of leaves interspersed with the young cones.

Although we had almost a carriage-load of evergreen treasures, we were still loath to leave the woods on this delightful sunny day with the thermometer at fifty in the shade, and we began to study Pine-trees, of which we have three species—the Pitch Pine (*Pinus rigida*), the Jersey or Scrub Pine (*P. Virginiana*), and the Yellow Pine (*P. mitis*). The Pitch Pine is the prevailing species in the neighborhood of Vineland.

This species, Professor Sargent tells us in his "Catalogue of the Forest-trees of North America," "is found from Mount Desert, Maine, and northern Vermont, to the upper district of Georgia, not extending west of the Alleghany Mountain region," and adds that it grows from forty to eighty feet in height, with a trunk sometimes thirty inches in diameter, and that it grows in the driest and most barren sandy soil as well as in deep swamps. No other Pine looks as well as this in our gardens among our Cedars and Sassafras, Sweet-Gums and Tupelos. When healthy it grows rapidly, and the younger trees are clothed from base to summit with heavy foliage, and the older ones are rugged and picturesque.

But from all appearances, in our region at least, they will soon all be killed by insect enemies. No other Pine, as far as I can learn, is beset with so many foes as this. It is a pitiable sight to see large tracts of young trees standing with brown foliage, killed outright by various insects. The only way that I have saved the young trees in my garden has been by the most persevering vigilance. One of the most destructive things I have found was the larvæ of a small Tortrix-moth (*Retinia frustrana*), which mines into the terminal buds and young shoots. On some of the trees, when I first found the creatures, there was scarcely a terminal shoot that did not hold from one to five of these destructive larvæ. They are completely hidden while at work, and soon destroy the twigs by eating all except a thin shell which is so brittle that it will crumble to pieces when handled.

My trees were badly crippled by their work, but by the third summer after finding them, I so diminished their numbers that the trees are again growing and looking well. There is no way of killing these larvæ after they have become established in the twigs except by hand picking. But I have found that the moth will not deposit her eggs on the twigs after they are well dusted with Pyrethrum powder. I use a small bellows while the twigs are damp with dew, and apply the powder after each rain.

Another destructive creature is the larva of the White Pine Saw-fly (*Lophyrus abbotii*), which eats the foliage. These larvæ live in colonies and soon strip a twig entirely of its leaves, and move on to the next, destroying every leaf as they go. But I can manage these creatures much more easily than the Tortrix-larvæ. I slip a pan beneath the twig and soon jar them all into it. I have no idea how many broods there are in a season, as I find them all summer long. And even as late as the middle of November I was surprised to find a colony feeding on one of my Pines, after they must have been frozen and ought to have been dead!

Although this creature is called the White Pine Saw-fly, it likes our Pitch Pine very much better. I have small White Pines growing in the vicinity of the Pitch Pines, but as yet the former have never been disturbed by the Saw-fly larvæ, nor by the Tortrix-moth.*

But these two insects are not the ones that have killed our Pines in the wood. This has been done by the larvæ of beetles, an account of which I must leave for another article.

Vineland, N. J. *Mary Treat.*

Winter Flowers in Oregon.

ON Christmas-day I counted some half dozen plants, mostly common weeds, blooming here in one of my neighbor's gardens. They were mostly plants which had not perished in the annual drying up of such things here in the latter part of the summer, which is our dry season. Their lives had been preserved because they chanced to grow in an irrigated and cultivated enclosure.

They were: The May-weed (*Anthemis Cotula*), the Shepherd's Purse (*Capsella Bursa-pastoris*), the Heron's-bill Geranium (*Erodium cicutarium*), the Mouse-ear Chick-weed (*Cerastium viscosum*), a Lupine (*L. micrantha*, var. *bicolor*), the black Mustard (*Brassica nigra*), the common Knot-grass (*Polygonum aviculare*) and *Boisduvalia densiflora*.

The last is without any common name here so far as I know. It is a near relative of the Godetias, Clarkias, etc. The small flowers are borne in a long, close, densely-leaved spike or in short lateral spikelets, and they are rose-colored or purplish. It is found only in moist ground. A smaller species, *B. Torreyi*, which blooms in the summer at the same time with this, I find on dry ground only.

The pretty little white and bluish purple flowers of the Lupine mentioned are out in the spring before those of any other Lupine here, and may be seen long after other larger and later-blooming plants of this genus have dried up and died. The Heron's-bill Geranium is the common forage plant, the "Filaree" of California and Oregon. The Shepherd's Purse,

* Figures of both these insects may be found in Bulletin No. 7 of the "United States Entomological Commission" under the title of "Insects Injurious to Forest and Shade Trees," by A. S. Packard, Jr., M.D.

the Chick-weed and the Knot-grass are the well known plants growing nearly everywhere in cultivated grounds.

But the first and only true wild flower of the season that I have seen as yet was a blossom of our little wild Strawberry plant, which I found early in December (I have found a number of them since). This plant, being a perennial, never wholly dies, and here it always renews its growth at the beginning of the rainy season. Indeed, I have known the ripe fruit to be gathered in November from plants growing wild in the pastures. If the winter be a mild one it will flower sparingly all the winter season; but it does not usually come into active blooming until about the middle of March, and April is its most floriferous season. But by that time many other species of plants, some of which are not as yet out of the ground, will have strewn the ground—literally covered it in many places—for a month or more with the prettiest wild flowers.

If the weather continues mild, in January we shall have the little Buttercup (*Ranunculus occidentalis*, var.?) which is so abundant here in the spring. It loves the upland or moderately dry ground, and in March and April large tracts of such land will be yellow for a time with its bright flowers. Its blooming period will culminate about the middle of April, or perhaps a little earlier; but it will continue to bloom more or less until nearly midsummer. The pretty little *Dentaria tenella* will also make its welcome appearance in January. By February it will have become abundant.

Crocidium multicaule, a very interesting little plant, because of its blooming so abundantly and so early in the season, will also be sure to be found. It has a little yellow blossom at the top of the slender stem, which usually is only three to four or five inches high. These little plants are gregarious, if such a term may be applied to plants, and are nearly always found occupying little patches of ground by themselves, which they render yellow when in flower. The plant belongs to the Composite family; and so the little blossom is composed of several very small individual flowers collected into a capitulum or head, the whole surrounded by an involucre of scales, which to persons not botanists gives it the appearance of a single flower. These Crocidiums always occupy warm, dry, sunny places.

In moist places, those who are looking closely for wild flowers will at this time be pretty sure to find our dainty Nemophila (*N. parviflora?*) in bloom. This little plant is also very frequently found in the timber where the ground is moist and shady, for, as its name implies, it loves the woods.

In or near the timber, where the ground is moist and shaded throughout the year, may nearly always be found *Synthyris rotundifolia*, whose cordate, crenately margined leaves are an interesting feature of these woods the year round. Its flowers are a light violet color, in clusters near the ground. In all mild winters *S. rotundifolia* blooms abundantly in January and February; I have even found it in flower before this time of year. It continues to bloom, of course, until late in the summer.

Peucedanum utriculatum, a small umbilliferous plant with yellow flowers, is also among our earliest plants to bloom. These humble plants spring up soon after the rains begin; and they have been growing now for some weeks. A Luzula, or Wood-rush, will probably complete the list of herbaceous plants found in bloom here during the winter months.

Among the trees, the Alder (*Alnus rhombifolia*) will be in bloom early in February, or in January if the winter be mild. The Hazels will follow closely after and then the Manzanitas and some of the early Willows. Nuttallia and the Snowberry will by this time be leafing out; and in early March the Dodecatheons, the Erythroniums and other large and handsome flowers will open in abundance, and our true season of flowers will begin.

Wimer, Ore. *E. W. Hammond.*

Flowers and the Perfume Industry.

M. THOMAS GRIMM describes in the *Petit Journal* the method by which, in the districts of Cannes and Grasse, enormous quantities of perfumes are annually made from the flowers grown in those neighborhoods. He estimates that something like 62,000 acres are given up to the growth of flowers between the right bank of the Var and the chain of the Estérel. At one of the largest perfume factories of Grasse, M. Grimm found that the three principal operations in the making of perfumes were the preservation of the odor of the flowers by distillation, by enfleurage and by exhaustion. The last named process, which is applied chiefly to Roses, is perhaps the most important. It consists of submitting the petals of the flowers to the action of heat in broad deep pans heated by steam and filled with a mixture of lard and beef-fat. When the Rose has yielded up the whole of its essence, the contents of the vessel are placed in horse-hair sieves, and the so-called pomade which runs out under pressure is again placed in the receptacle with fresh Rose-petals. This operation is three or four times repeated, in order that the fat may be thoroughly saturated with perfume. The product is not sold in this condition as perfume, since it is far too strong smelling. It is treated as a kind of "stock," from which most of the perfume is afterward extracted by means of alcohol, and the residuum is used as a basis for pomade or toilet soaps, according to the degree of aroma that may remain.

The distillation of flowers is still conducted by aid of the time-honored machine called the "Florentine Receptacle." This apparatus collects not only the water distilled from the flowers, double, triple or quadruple, according to the number of distillations, but also the essential oil, which is the very quintessence of the perfume. Ten thousand pounds of fresh Rose-leaves will provide only one pound of this essence; but only half that quantity of Orange-flower leaves is required to make a pound of essence. There are some flowers which will not yield up their essence to what is called the hot method of manipulation. Among them are the Violet, Mignonette, Jessamine and Heliotrope, and these have to be treated by a very delicate process; the petals are brought into contact with wool saturated with Olive oil, and then the perfumed oil is very carefully expressed. Nearly every operation connected with the making of perfumes requires to be performed very rapidly, since the value of the product depends in great measure upon the perfect freshness of the materials. The flowers are picked by women shortly before dawn, are immediately cleansed, and piled up in great heaps in the workrooms, which themselves need to be very carefully chosen, since they must be spacious, well aired and shielded from direct sunlight. That which M. Grimm visited satisfied these conditions admirably, being the crypt of an ancient Capuchin monastery.

Such is the rapidity with which the work has to be done, that if all the flowers used in the making of perfumes came to perfection at the same time it would be impossible to accomplish it. Happily, that is not the case. The season begins with the Violets, on January 15th, and they are gathered until April 15th. In the Commune of Grasse alone from 290,000 to 300,000 pounds of Violets are manipulated during these two months. The Jonquils flower in February and March, and furnish 30,000 pounds to the perfume factories of Grasse. The crops of Orange-flowers and Roses are the most important of all; this harvest begins on April 20th and ends on May 31st. The neighborhood of Grasse produces annually 3,800,000 pounds of Orange-flowers and 2,000,000 pounds of roses. Mignonette, which is gathered from May 15th to the end of June, yields a crop of 50,000 pounds. The Jasmine, which yields 300,000 pounds, and the Tuberose, which gives 150,000 pounds, are gathered from July 20th to October 10th. Then comes the Cassia, with its concentrated, penetrating and almost violent perfume, which begins to flower in October and finishes at the moment when the Roses begin. No mention has been made of Lavender and Rosemary, because, although they are cultivated to perhaps a greater extent than any other flowers, they are chiefly treated throughout the south of France by nomadic distilleries which move about from canton to canton.

Notes on North American Trees.—XXII.

42. *Reynosia latifolia*, Griseb. This small Florida tree has been referred (Gray, *Bot. Gazette*, iv., 208) to the *Rhamnus lævigatus*, Vahl ("Symb.," iii., 41), the *Ceanothus lævigatus*, DC. ("Prodr.," ii., 30), and if the correctness of this reference could be satisfactorily established the proper name of the plant would be *Reynosia lævigata*. The identity of these two plants, although possible, is certainly doubtful. Vahl's description is short and unsatisfactory. The leaves of Rhamnidium are usually opposite, while those of his plant are described as alternate without any reference to their being emarginate at the apex, a pretty constant character in nearly all the species of Rhamnidium. Professor Trelease, who has examined Vahl's herbarium at Copenhagen (*Proc. St. Louis Acad.*, v., 364), was unable to find the type of *Rhamnus lævigatus*; so that as long as this uncertainty remains it will be safe to retain Grisebach's name as he wrote it.

Reynosia is referred by Baillon ("Hist. Pl.," vi., 82) to Condalia. It differs, however, from the plants of that genus in the thinner and much less prominent disk of the flower, in the thinner wall of the stone of the fruit, and in its longer radicle and ruminate albumen; and in habit and in its unarmed branches. Baron Eggers, in his characters of the genus Reynosia ("Vidensk. Medd. fra nat. For. Kiobenh.," 1877, 3), describes the flower with five (o?) cucullate, unguiculate petals inserted on the margin of the disk between the lobes of the calyx. I have been able to examine the flowers of *R. latifolia* only; these show no trace of petals, nor do we find the margins of the cotyledons recurved and subcontorted as described by Eggers. The stigma is as often three as two-lobed.

43. *Condalia ferrea*, Griseb. This common West Indian and Florida tree has already been referred to no less than six distinct genera, in none of which it seems properly to belong. The last reference, that of Grisebach, to Condalia, made probably because, like Condalia, it has no petals, certainly cannot be sustained. The completely two-celled ovary, exalbuminous seed filled with the thick and fleshy cotyledons, remove it from that genus, which it does not resemble in its unarmed branches, and large opposite, persistent leaves. The distribution of this plant is quite different, too, from that of Condalia, which is not represented in the West India flora. The structure of the seed is that of Zizyphus, which is sometimes destitute of petals, but the pinnate venation of the leaves and the unarmed branches make it undesirable to unite it with that genus. Nothing remains, then, but to consider our plant the type of a new genus, or to refer it to the Brazilian genus Rhamnidium, enlarged by the addition of a section with apetalous flowers to receive it. This, on the whole, seems to be the best disposition to make of our plant, Reisseck's genus (Martius, *Fl. Braz.*, xi., 194) having been already extended by Grisebach (*Cat. Pl. Cub.*, 32) to include a group of West Indian shrubs very similar to our plant in habit and inflorescence and in the structure of the fruit, although, unlike it, provided with petals. The leaves of all the West Indian species are coriaceous and persistent without the prominent veins which characterize the Brazilian species, while the leaves of these last are apparently deciduous, at least in the case of two of the species. The walls of the stone of our plant are thick and crustaceous, but not more so than in one or two of the West Indian species now referred to this genus; and the branchlets are thickly beset with lenticels, a character common to all the species of the genus.

The oldest name of our plant is that of Vahl (*Symb.*, iii. 41, t. 58), who published an excellent figure of it; so that, if it is referred to Rhamnidium, it becomes *Rhamnidium ferreum.*

Rhamnidium was placed by Bentham & Hooker in the "Genera Plantarum" in the tribe *Rhamnæ*, in which the fruit is described as dry or drupaceous, with three (rarely two to four) indehiscent or two-valved cocci or stones. The fruit of Rhamnidium is, however, a true drupe, with a single one to two-celled stone, and seems rather to belong with the *Zizyphæ* and to follow naturally after Condalia.

C. S. Sargent.

New or Little Known Plants.

A Hybrid Calanthe.

IN the report of the Boston Chrysanthemum Show, on page 566 of the issue of Garden and Forest for November 19th, 1890, appears a reference to a new seedling Calanthe. The specimen in question was exhibited by Mr. Richard Gardner, gardener to Mr. Cornelius Vanderbilt, of Newport, Rhode Island, and it was awarded the silver medal of the Massachusetts Horticultural Society. The seedling, as stated in the report, is the result of fertilizing *C. vestita rubro-oculata* with the pollen of *C. Veitchii*. It was raised in the garden of Mr. Pierre Lorillard, at Jobstown, New Jersey, by Mr. Gardner in 1882. The pseudo-bulbs, in the development of which it is extremely prolific, are larger than in either parent, very broad at the base, tapering gradually to a small apex, and have never shown the jointed formation characteristic of *C. Veitchii*. The plant differs from *C. Turneri*, a species from Java to which it has been compared in this latter particular, and is superior to it in other respects. With the exception of being a trifle wider, the leaves bear a strong resemblance to those of the male parent. The racemes are shorter than in *C. Veitchii*, not so erect, and yet with a less conspicuous arch than the inflorescence of the seed parent, and they are produced more freely than in either parent. The larger flowers, with a more even spread to the parts, are arranged as compactly as those of *C. Veitchii*, the color being of a purer white than in *C. vestita rubro-oculata*, with a larger, though less dense, blotch of a reddish tint at the base of the lip. The illustration on page 17 is reproduced from a photograph of the raceme of the plant exhibited in Boston.

Some time ago a representative of the Messrs. Sander & Co. purchased a portion of the stock of this Calanthe, and sent a plant of it to Dr. Reichenbach with the suggestion that it be named after Mr. Eyerman, of Easton, Pennsylvania, well known as a collector of choice Orchids; but Dr. Reichenbach died before he had published any description or name of the plant, which is now locked up in his herbarium. Specimens have been sold at auction, however, under the provisional name of *C. Eyermanii.*

Mr. Gardner has another promising hybrid Calanthe which is also the result of crossing *C. Veitchii* and *C. vestita luteo-oculata*, but in this instance the latter is the male parent. Here the flowers resemble those of the pollen parent in color, but the white is the purest I have yet seen in a Calanthe, and the yellow of the eye is beautifully delicate. In all other respects this plant resembles *C. Veitchii*. But a correct estimate of its good qualities can hardly be given yet, for, although raised at the same time and place as the other hybrid, the plant, having passed through many vicissitudes, is still small.

There is in existence another hybrid Calanthe, *C. Sedeni*, which claims the same parents as the so-called *C. Eyermanii*. It was raised by Mr. Seden at the well known London establishment of Messrs. James Veitch & Sons. In color the flowers resemble those of *C. Veitchii*, and they show an appreciable improvement in size. I am not aware, however, which is the pollen parent in this case, but, in view of Mr. Gardner's experiences, it is probable that *C. Veitchii* was the seed-bearer. Perhaps the experts of the Veitchian establishment can throw some light on the matter.

Cambridge, Mass. *M. B.*

Foreign Correspondence.

London Letter.

Cattleya Warocqueana.—I have received the following note from M. Lucien Linden, Director of *L'Horticulture Internationale*, Brussels:

"I read in the Garden and Forest for November 26th a note by you on *Cattleya Warocqueana* in which that new introduction is referred to *C. Gaskelliana*. I have too often had occasion to recognize the fairness and courtesy of your criticism in that journal to think of complaining of your judgment with respect to this Cattleya, but I would like to call your attention to the fact that some of the best judges have recognized in *C. Warocqueana* the *C. labiata autumnalis*, a view confirmed by the time of its flowering and the form of its flowers; also that the numerous varieties of *C. Warocqueana* that have flowered with us, of which some have been exhibited in London, are much superior to the best forms of *C. Gaskelliana*. I can also assure you that *C. Warocqueana* comes from a locality very far removed from the habitat of *C. Gaskelliana*."

I have not seen among the plants of *C. Warocqueana* exhibited by M. Linden at the meetings of the Royal Horticultural Society any that could be considered identical with the autumn flowering *C. labiata*, now called *C. labiata vera*. The opinion that such might be the case was discussed by the Orchid connoisseurs at the meetings of the Royal Horticultural Society, but obtained no support. By the side of M. Linden's *C. Warocqueana* were exhibited plants of *C. Gaskelliana* (which, of course, is also a variety of *C. labiata*), and the opinion of those qualified to speak on this subject was as I expressed it in the note in Garden and Forest to which M. Linden refers—namely, that whilst there was no clear line of separation between *C. Warocqueana* and *C. Gaskelliana*, the plants of the former shown by M. Linden were better forms than any yet seen of *C. Gaskelliana* as introduced seven years ago. As already stated by me, some of M. Linden's flowers

were not unlike those of *C. speciosissima*, now called *C. Luddemanniana*, which blooms in October. Certainly I have seen in *C. Warocqueana* forms of most exquisite beauty, quite as striking and attractive as any of that section of the Labiatæ group to which it belongs. The geographical point referred to in M. Linden's note cannot be taken for much alone, as the distribution of *C. Loddigesii*, of *C. Dowiana*, with its subvariety *aurea*, and of *C. superba*, indicates. Slight variations are certain to occur in different localities. It is only in the case of Orchids that these slight differences are seized upon as good specific characters.

A HYBRID STANHOPEA.—The first hybrid in this genus has been raised in Germany by a Mr. Weber, who crossed *S. oculata* with *S. tigrina*, the result being a hybrid intermediate between the two parents and inferior to *S. tigrina*. The Stanhopeas are all interesting and good garden plants, but they do not find much favor in England. This may be partly owing to the fugacious character of the flowers, although they last quite as long as the flowers of many popular Orchids. Such species as *S. tigrina*, *S. insignis*, *S. platyceras*, *S. grandiflora*, *S. Devoniana* and *S. Bucephalus* are worth a place in every good collection. They are very easy to cultivate, they bloom annually, their flowers are large, fragrant and richly colored, whilst structurally they are more remarkable than most Orchids. A picture of Mr. Weber's hybrid is given in the December number of *Gartenflora*.

CYMBIDIUM TRACEYANUM.—This plant was sold by auction last week, and realized seventy-five guineas. It was bought by Mr. Sanders, of St. Albans, who sent a flower to Kew for determination. Mr. Rolfe considers it is only a variety of *C. Hookerianum*, the *C. grandiflorum* of Wallich. The only difference between the type and this high-priced plant is one of size, the flowers of the latter being nearly an inch wider than those of the former, which are five inches in diameter. Here is an instance where size makes a difference of seventy guineas in value.

FLORISTS' FLOWERS.—The editorial remarks in GARDEN AND FOREST (iii., 569) with reference to the "improvements" made by florists in the size and form of flowers are endorsed here by all except those who consider grossness of quality in a flower the acme of perfection. What is perfection in a flower? To some florists it is rank heresy to speak disparagingly of double flowers or big flowers or over-formal flowers. The bigger or more double a flower, the better it must be. The late Mr. Hibberd used to say, "Let this class go their own way; they have their own ideas of perfection, and in their efforts they do an enormous amount of good work which is easily separated from the bad." Even double and huge-flowered Begonias have a special interest as showing the wonderful power to vary inherent in all plants, which requires certain simple conditions to bring it out. Mammoth turnips and cabbages are only a few examples of what cultural skill will achieve when its aim is to produce size. It is only when size is repulsive that objection is strong. With regard to double flowers I am of the opinion that except in a few cases they are less attractive than their single-flowered progenitors. The Carnation, the Chrysanthemum, the Gardenia, the Almond, and, of course, the Rose, are the exceptions.

Fig. 3.—A Hybrid Calanthe.—See page 16.

QUERCUS TINCTORIA.—Mr. Anthony Waterer has forwarded some leaf-branches of his "Knap Hill" variety of what he calls Scarlet Oak. He also states that "the leaves are still hanging thick upon the trees." As this was written on December 17th, after a fortnight's severe frost and fog, it is clear that Mr. Waterer's Oak is an unusual one. *Q. tinctoria* as represented at Kew has been leafless for some time. Of course there is a great difference between these Oaks as grown on the poor gravelly soil at Kew and in the famous Knap Hill Nursery, where the soil is exceptionally deep and rich and the situation sheltered. At the same time it is risky to attempt to name an Oak of this character from leaves alone. The rich chocolate-crimson of the leaves of Mr. Waterer's Oak, together with their persistency in frosty weather, give it an exceptional value in England at any rate. After comparing the leaves with specimens with the help of Mr. Nicholson I am driven to own that the Knap Hill Scarlet Oak may be *Q. tinctoria* or *Q. coccinea* or a hybrid, or something else. [The Knap Hill Scarlet Oak is *Quercus coccinea*.—ED.]

London. *W. Watson.*

Cultural Department.

Notes on Some Hardy Wild Roses.—II.

Rosa blanda is a very hardy Wild Rose, belonging to the Cinnamon Rose group, which is found more or less commonly throughout the north-eastern part of North America. The type is a dwarf plant, rarely growing more than three feet in height, and probably hardly averaging over two feet, and it is particularly distinguished by having its stems wholly unarmed or bearing very few prickles. The leaflets are usually large, and the flowers, which appear a week or ten days later than those of *Rosa acicularis*, are also above the average in size, fragrant and of a bright rosy color, and often borne singly. The large, roundish, dark-red colored fruit, with persistent sepals, is often brightly conspicuous as it hangs just above the snow along road-sides in its native habitat, notably in the valley of the St. Lawrence River. In its natural haunts it seems to prefer rich rocky soils.

Little seems to have been done to improve this plant from the gardener's point of view, but on account of its large blossoms and unarmed habit it may be made a parent of some useful hybrids. As this species extends westward it seems to become more variable, several varietal and specific names having been given, which are considered as simply forms or varieties of *Rosa blanda* by other authors. Some of these plants are characterized by having more numerous flowers, in corymbose clusters, and by their prickly stems.

Rosa Nutkana, a native of the Rocky Mountain region and the Pacific slope from northern Utah to Alaska, appears in cultivation at the Arboretum as an exceedingly strong, stout-stemmed species, growing from six to eight feet in height. The stems bear a few strong recurved spines, which are often very broad at the base, so that they are almost triangular in shape. On many plants there are few or no prickles, and the flowering branchlets are perfectly smooth. The first flowers appear at about the same time as those of the last species. They are usually solitary, and average about two inches or more in diameter, and are of a delicate pale, pinkish red color.

The erect habit of this species, its thick, clean stems, which attain a height of three or four feet without branching, and its comparative freedom from spines, may make it a desirable plant to form tree-like or standard bushes upon which to bud or graft other garden varieties, as is often practiced upon the Dog Rose in Europe. *Rosa Nutkana* does not spread from suckers, and it is perfectly hardy in this latitude.

What has been classed as *Rosa pisocarpa*, a species from California and the Pacific coast region, appears very variable in habit under cultivation. Sometimes the plants are moderately tall and bushy, while others have stems as high as those of *R. Nutkana*, but not so coarse and stout. The spines are more abundant, though very much smaller, and prickles are numerous. The flowers are not so large, and are usually of a much deeper color than those of *R. Nutkana*, and the fruit is small and globose. There is some confusion as to the limitations of *R. pisocarpa*, as well as of a number of other western species of Rose which are too little known by botanists and in cultivation to give any idea of their value.

Rosa gymnocarpa, whose habitat is also the western side of the continent, is a slender, sometimes long stemmed, species, which, although it lives through our winters, does not yet appear to be sufficiently vigorous and enduring to be very satisfactory here. The flowers are rather small, of the usual pale rose color, though forms with white flowers are found. It seems to be more closely allied to the Asiatic *R. Beggeriana* than to any other species in cultivation.

Rosa rugosa also belongs to the Cinnamon group of Roses, with one or more species of which it appears in gardens to have exchanged pollen, which has produced forms intermediate between the two parents. Some of these have been sold as *Rosa rugosa*, a fact which is to be regretted, because these plants are generally much inferior and less beautiful in foliage and flower than the typical species. *R. rugosa* and its white variety easily rank among the most beautiful of the very hardy Roses in cultivation; and, either for its thick glossy foliage, or on account of its flowers, which, under good cultivation, expand four or even five inches across, or for the sake of its large rich red fruit of late summer and autumn, it is a desideratum for any garden. It is one of the hardiest species, and will stand twenty-five degrees or more below zero without any apparent injury. It may be called a perpetual blooming Rose, for although it has only one regular period of profuse flowering, it continues to bear blossoms as freely as a Hybrid Perpetual until checked by frosts. This species is now being used in hybridizing with others in the hope of obtaining even better Roses than any we now have.

So far, the double flowered forms have, as a rule, proved less interesting than the single blossomed type. There is much variation in the depth of color of the flowers of different plants, those having the deepest purplish red blossoms being the best. The white form is very desirable. The prickly character of the whole plant is objectionable, but it is exceeded by the dense and formidable covering of prickles which protect the stems of *R. Kamtschatica*, a species closely resembling *R. rugosa* and possibly only a variety of it.

It has been stated by some writers that the thick, rugged, dark green foliage of *Rosa rugosa* was not liable to attack by the usual Rose-injuring insects. This is not the case, however, for the Rose-slug (*Selandria rosæ*), the Leg-Hopper (*Typhlocyba rosæ*) and other insects sometimes attack it quite freely, but the thick, leathery character of the foliage serves to make equally serious invasions less noticeable than in other thinner leaved species. The flower-buds of this, and some other wild Roses in the Arboretum, are often destroyed by a well known and widely distributed red-colored snout-beetle (*Rhynchites bicolor*), which eats holes into the buds, and whose larvæ live within and destroy the fruit.

Arnold Arboretum. *J. G. Jack.*

Winter Pears for Market.

THE Anjou pear I regard as the queen of winter pears for the table. It possesses all the virtues of a perfect pear, being rich, vinous and melting, with keeping qualities not excelled by any pear of its season. It is large, of pleasing shape, fragrant, and when fully ripe of a warm straw color. Coming into market when all fall pears are gone, it may be kept from November until March. As a market fruit it is always in ready demand wherever known, and brings the highest price, $5 to $6 per bushel for fine selected fruit. The tree is hardy, vigorous, not subject to blight, does not overbear, and hence requires little thinning, while few inferior fruits are seen on the tree.

Anjou does well as a standard or a dwarf. It should be planted in well-prepared, rich, dry ground and kept under the best cultivation, enriching it every year alternately with a moderate dressing of well decomposed stable manure and hard-wood ashes. A thin sprinkling of salt during winter is also beneficial. Pruning is very important to keep up the vigor and health of dwarf trees and also to prevent overbearing. Dwarf trees that have been maintained under proper cultivation, and have been properly pruned, may be seen producing excellent crops of fine fruit after a half century of existence. Most of the dwarf Pear-orchards throughout western New York are neglected in most, if not in all the above requirements, and therefore their lease of life is short and unsatisfactory.

The Winter Nelis is one of the finest winter pears, and a great favorite in eastern markets. The fruit is of medium size, melting, and possesses a rich aromatic flavor. For a dessert pear in respect to size, color and quality it has no superior among winter varieties. Its season is from December to March. Winter Nelis should be grown on Pear stock, or double-worked on dwarf stock, White Doyenne being the best tree for double working. A slender grower, in order to obtain bearing trees within a few years, it should be top-grafted on good-sized, vigorous trees. It often overbears, and requires thinning, otherwise the fruits prove inferior in size and quality. Indeed, too much stress cannot be laid upon the necessity of thinning, not only with pears, but with all other kinds of fruit.

By all who have tasted the Josephine de Malines when well grown and ripened this will be pronounced one of the very best late-winter pears. The fruit is medium to large, the pink or salmon-stained white flesh, melting and of a delicious rose aroma. This succeeds either as a standard or dwarf. Its season is from January to April. Owing to its moderate, irregular growth, it is little propagated in nurseries, and on this account is not much disseminated.

Lawrence, largely grown in some sections of our state, is held in high esteem by those who prefer sweet pears. The fruit is medium to large, melting and of pleasant flavor. Its season is from December to January. The tree is a moderate grower and very productive.

Clairgeau is the largest and most attractive early winter pear in cultivation, and always commands the highest price. The fruit is very large, pyriform, yellow and red, with its red cheek usually very highly colored, nearly melting, and keeps till January, the tree being a good grower and an abundant bearer. This is a very valuable market pear.

I have thus briefly referred to the best winter market pears that have come under my observation. Others might be added, but none, all requisites considered, equal to those specified. This is applied to winter market pears solely.

The pear for market and the pear for the amateur are two different matters. And yet, while the list might be increased in the latter case, where quality is the main consideration, it would be, nevertheless, difficult to name any finer winter pears for the table than Clairgeau, Anjou, Winter Nelis and Josephine.—*George Ellwanger in Popular Gardening.*

Bartell's Dewberry.

ONE of the most encouraging phases of pomology in this country at the present time is the progress we are making in improving our native fruits. Within the past half century many valuable varieties of the native Grape have been developed, and as the result our markets are now abundantly supplied with this delicious fruit. The tender foreign Raspberry has been supplanted by hardy native varieties, and the same may be said of the Gooseberry. In the north-western states improved varieties of the native Plum are gradually coming to the front and give promise that plums of good quality may soon be grown in our coldest states. The Crandall Currant seems to be a step forward in the development of a new species that may yet prove valuable, and the dwarf Juneberry and Buffalo-berry are beginning to receive attention. The garden Blackberry, now a valuable market fruit, appears to have been entirely developed in this country, and of more recent introduction to culture is the Dewberry, which, if we may judge from its best showings, gives promise of developing into one of our most delicious and productive small fruits.

It is only within a few years that the cultivation of the Dewberry seems to have been attempted. The earliest mention I have seen of any attempt of this kind was in the *Massachusetts Ploughman* in 1882. This was before the introduction of any named variety so far as I know. Within the past few years the Lucretia and Bartell's Dewberries have been rather extensively advertised in nurserymen's catalogues. But not all of the testimony from those who have tried them has been favorable, though occasional reports have been very flattering.

My experience with the Dewberry at Geneva, New York, was quite unsatisfactory. The variety tested was called Mammoth, and it proved a decided failure. But in the summer of 1889 I saw a small plantation of Bartell's variety on the grounds of Mr. H. C. Adams, of Madison, Wisconsin, that at once established my faith in the possibilities of this fruit. I was informed that the most productive season had passed at the time of my visit, and that the berries which I saw were inferior in size to those gathered a few days earlier. But at this time the vines were fairly well loaded with fruit of larger size and more attractive appearance than the finest blackberries, and, to my taste, altogether superior in quality. There is a juicy, melting quality in the dewberry that is scarcely equaled by any other fruit of my acquaintance.

Fig. 4.—Bartell's Dewberry, natural size.

The fact that the Dewberry is prostrate in its habit of growth is a decided objection to it in climates where winter protection is unnecessary. But in regions of severe winters the ease with which the plants may be covered is a partial recompense for this fault. It is said that a plantation once started is eradicated from the soil with considerable difficulty, which, if true, is an additional objection to the plant in cultivation.

I consider Bartell's Dewberry worthy of trial by all who are interested in testing new fruits. Mr. Adams, who is an extensive grower of Blackberries, has found this variety more profitable as a market fruit than any Blackberries he has grown.

The accompanying illustration is made from a specimen taken after the height of the fruiting season had passed. It would not have been difficult to have found larger fruits and much larger clusters at an earlier date.

University of Wisconsin, Madison. *E. S. Goff.*

Notes from Wellesley.

Reinwardtia trigynia and *R. tetragynia* are old-fashioned winter-flowering greenhouse plants now blooming here which deserve more general cultivation. They belong to the Flax family, and are nearly related to the typical genus Linum, to which they have sometimes been referred. Their habit is semi-shrubby, flower clear yellow; and although the petals are fugacious the flowers are produced in such abundance as to remain showy for five to six weeks during December and January. Old plants may be divided yearly, but cuttings taken from non-flowering shoots make neater plants.

Streptosolon Jamesonii, the handsome greenhouse evergreen, is the only species of the genus, and was sent out as *Browallia Jamesonii* many years ago. It is still a comparatively uncommon plant. I have grown it for two years, and had almost come to the conclusion that it had little to recommend it, until recently I saw two fine trained standards in a neighboring greenhouse. I had grown mine planted out, and so treated they made coarse, rambling plants which never flowered well; but treated as standards, continuously in pots, the growths are shorter, they can be better ripened, and the beauty of the plant is increased by their taking a graceful, weeping habit. The flowers are orange yellow, borne in elegant panicles at the ends of the branches, and they last for a long time. Propagation is by cuttings in early spring; they root easily. This plant requires a good rich loam and abundance of water during the growing and blooming season.

Daphne Indica is not so frequently met with as it should be. It is almost indispensable in any conservatory for the odor of its flowers. Although having handsome bright green foliage it is an ungainly plant no matter how it is grown, but wherever the flowers are, in view or out of sight, their presence will be felt. It is propagated by cuttings or grafting. Cuttings of half ripened growths taken off with a heel and inserted in sand without bottom heat are pretty sure to root, although they may take two months to do it.

Clematis indivisa is a rare and pretty white flowering greenhouse climber from New Zealand. Mr. Harris has trained it to the roof of the Odontoglossum-house, in company with Lapagerias, which position seems to suit it exactly. Though not so handsome as many of the summer-blooming species of the northern hemisphere, it is yet a very interesting plant.

Lachenalias are not now required to fill the position they once did. They are remnants of the time when it was customary in all large places to have a house for South African plants alone, from whence they come. They are still grown because of a dislike to discard anything really good. The genus is here represented by two of the best, *L. tricolor*, and its variety, *Nelsoni*, the latter raised by the late Mr. Nelson, of Alborough, England, an amateur who made a specialty of these charming bulbous plants. In appearance they somewhat resemble a Squill, with mottled leaves and pendant waxy bells of yellow, red and green in mixture. It will not do to force them; their growth is slow, beginning about September, the blooming season in a cool greenhouse being February. In England, Mr. Ingram, of Belvior Castle, uses the common *L. tricolor* for bedding purposes, keeping the plants over winter in a cool frame, where their blooming season is retarded until March and April. They increase freely by bulblets produced naturally, and blooming the second year.

Wellesley, Mass. *H. G.*

Work of the Season.

THE great variety of work now pressing in the many departments of the garden makes this one of the most interesting periods of the year to the in-door cultivator. Among the tender-foliaged plants, such as Marantas, Dieffenbachias, Alocasias, Begonias, and others of like character, the increasing power of the sun will be felt, and light shading will be found necessary, though this should be applied with judgment, as over-shading is fully as injurious to most plants as is the other extreme. The use of one of the many different shading materials, such as muslin, burlap or other cloth, or that formed of light wooden strips linked together so that it can be rolled up in cloudy weather, is undoubtedly the best system of shading, but as such appliances add considerably to the running expenses of a place, they are frequently supplanted by cheaper devices, and among these naphtha and white lead, mixed to about the consistency of milk, and applied either with a brush or syringe, is one of the most serviceable. Even whitewash will give good results, except for the fact that it removes the paint from the wood-work wherever it is applied. In the Palm-houses little or no shading is required so early in the season, except for some of the soft-leaved species, such as Calamus, Verschaffeltia, and most of the Geonomas.

If one could only secure perfect glass for glazing the houses there would be less need for early shading, but one imperfect square of glass may ruin several fine plants in a few hours, and it is therefore best to be on the safe side. And speaking of glass brings to mind the fact that some of the large Rose-growers are now using second quality of French glass in preference to first quality American glass, on the ground that there are fewer imperfections in the French glass and consequently less injury is done to the foliage beneath it, while the cost of the two qualities quoted is about the same.

Where the early forcing of flowering plants is practiced this operation will now be under full headway, and it will be necessary to give proper attention to every detail. With Lily-of-the-Valley one of the necessary conditions for successful early forcing is to allow the pips to freeze thoroughly before they are brought into heat. This fact is so well recognized by large commercial growers that they secure this condition by means of cold storage houses; this arrangement, though costly, rendering them independent of the weather.

For Tulips, Narcissus, Hyacinths and other Dutch bulbs the freezing process is not essential, and as these may be brought into flower with moderate heat they are naturally among the most popular and satisfactory plants with amateur cultivators.

A succession of *Lilium Harrisii* and *L. longiflorum* should be arranged, as the former may be had in flower by Thanksgiving-day, and by successive lots a supply may be kept up until spring. *L. longiflorum* will not force as early as *L. Harrisii*, but from the latter part of February or beginning of March and onward this exquisite Lily may be enjoyed in all its pure-tinted loveliness.

Other easily forced spring flowers are the Indian Azaleas, among which the old Fielder's White and also Alba are of the easiest to manage, though Deutsche Perle and Flag of Truce may also be brought in early, and are far superior in flower to the first named. Among the host of colored Azaleas, Madame Vander Cruyssen is by far the best for early work, while Charmer, a large-flowered, dark pink variety, is also good, but is not quite as shapely a grower as Madame Vander Cruyssen.

Some Genistas will also be brought in from the cold-house from time to time in order to continue a supply of their graceful racemes of bright yellow, and it is well to remember also that the present is a good time to put in cuttings of these useful plants, in order to secure strong, stocky young plants for next winter. Rose-cuttings, and also those of Carnations, Bouvardias and similar stock for next season, should now be provided, while the time for sowing seeds of a multitude of plants for summer bedding is at hand. The usual complaint at this time is lack of space for some of these very necessary operations, but it should be borne in mind that drawn up seedlings seldom make satisfactory plants, and it is therefore wisest to limit the varieties in accordance with the space at command. If Ferns are grown this is also a good season in which to sow spores, from the fact that the growing season for most of the exotic species is now about to begin, and in fact in many cases has already begun, and seedlings started now usually make more progress than when sown later.

Holmesburg, Pa. *W. H. Taplin.*

Orchid Notes.

Cœlogyne cristata.—This is an old favorite with Orchid-growers, and it makes a host of new friends for itself every year. It is very beautiful at this season, the graceful racemes of pure white flowers, with conspicuous marking of yellow in the lip, being produced in great profusion from the base of the most recent pseudo-bulbs. Where there are a number of plants a succession of bloom may be maintained from the middle of December to the latter end of February by confining to a lower temperature those whose flowering it is desirable to retard. They may be returned to the normal conditions as occasion demands. The plant loses somewhat in some hands by being too severely dried off after the growing season. During the blooming period it is far from uncommon to see the flowers associated with pseudo-bulbs much shrunk and withered, and leaves of unhealthy hue. It is true that a smaller quantity of water is demanded when the growth has been perfected, but the supply should not be withheld so far as to cause this condition. There is nothing to be gained by this rigorous treatment. The flowers appear just as freely in the company of plump pseudo-bulbs and rich green leaves, and, as a matter of course, the plants are then much more pleasing to the eye.

Maxillaria picta.—Some other species of the genus Maxillaria are better known than this one, and their superiority entitles them to much more general attention than they receive. It is a plant very easily managed. It is a native of Brazil and was introduced to Europe in 1832. The ovate pseudo-bulbs are slightly compressed, furrowed and clad with ragged brownish sheaths. They support two or three sharply pointed ligulate leaves, from twelve to fifteen inches in length, leathery, and dark green. The scapes emerge from the base of the pseudo-bulbs formed during the previous spring and summer. They are from six to nine inches in length, and each bears a single flower about two inches in diameter. The petals are smaller than the sepals; and both petals and sepals are incurved and have their margins turned slightly backward. The interior surface is dark orange with irregular brownish blotches, and the exterior creamy white, becoming greenish at the base, with numerous spots and patches of reddish purple. The sepals are further marked on the outside with a line of the latter color which traverses one-third of their length from the base. The lip is broader than the sepals and about half their length, creamy white, marked on the upper surface with reddish purple spots and with lines, which are most numerous toward the margins. The column is reddish purple and very conspicuous. The flowers are produced with great freedom during November and December, and they are powerfully fragrant. It is the odor, rather than the color, size or form of the flowers, which renders them attractive and pleasing. The plant thrives best in pots or pans, with ample drainage material, rough peat fibre and growing sphagnum. Abundance of water is required during the growing season, but afterward the supply may be slightly diminished with advantage. A constant intermediate temperature gives very satisfactory results.

Saccolabium giganteum.—Among the numerous Orchids now in bloom it would be difficult to find one more stately or one in which the colors of the flowers are more exquisitely blended. It is a plant of erect habit, the stem being well furnished with bold strap-shaped leaves about twelve inches in length, unequally notched at the apex, and of dark green color, with parallel lines conspicuously paler. The pendulous axillary inflorescence is about as long as the leaves, and it takes the form of a cylindrical raceme four inches through at the widest part, tapering slightly toward the tip. The flowers are sweetly fragrant, each an inch across, and densely packed on five-sixths of the peduncle's entire length. The sepals are elliptical, white, with pale purple spots, and the petals elliptic-lanceolate and like the sepals in color. The lip is dilated and trilobed at the apex, the lobes turned upward, bright purple, with lines of a darker tint on the upper surface and lilac tipped with purple beneath. The column is greenish white, marked with purple at the base and in front. This species succeeds best in pots, as do most of the large-growing Saccolabiums, with crocks and rough pieces of charcoal and sphagnum on the surface for the roots. The plant delights in a hot, moist atmosphere and frequent applications of water during the growing season. To promote abundant flowering it is necessary, however, that the roots and air be maintained in a somewhat drier state, and that the temperature be slightly reduced in winter. But even then sufficient water should be given to prevent the smallest degree of shriveling. Free exposure to light, but strict shading from brilliant sunshine, even at the dullest period of the year, are essential for securing luxuriant foliage.

Cambridge, Mass. *M. Barker.*

Anchusa Italica.—The Italian Alkanet, as it is called, is a member of the Borage family, and is also known as *Anchusa azurea* and *A. paniculata*, both of which names are descriptively correct, as the flowers are borne on tall panicled stems and are of a bright shade of blue. If we except the Larkspurs there are few hardy plants that possess this peculiar shade of blue; and, as the plant under consideration flowers in early summer and lasts long in perfection, its value is considerable, as it is quite hardy and also a true perennial. The Anchusas are among the easiest of perennials to raise from seeds, for these germinate as readily as those of most annuals, and as seeds are freely produced it is obviously the best means of propagation. There are several other Anchusas, but our own experience is limited to the above and to *A. Capensis*. This last species is said to be a tender biennial; but we have found it perfectly hardy in that the abundant seeds, produced rapidly, germinate around the parent plant, survive the winter and flower the following season in profusion for three months. The flowers, however, are small in comparison with those of *A. Italica*. It is a well known fact that bees are partial to many Boraginaceous plants, and to the genus Anchusa in particular. *A. Capensis* is eminently suitable for sowing in places where it can be left alone to take care of itself, as in a wild garden. The Alkanet of commerce, a deep red dye, is the product of *A. tinctoria*, a dwarf species of spreading habit.

South Lancaster, Mass. *E. O. Orpet.*

The Forest.

Forest-policy Abroad.—II.

WITH respect to the second class of forest-property, that belonging to towns, villages and other public bodies, it is again impossible to speak for the whole of Germany, except upon the broadest lines. The state everywhere exercises oversight and a degree of control over the management of these forests, but the sphere of its action varies within very wide limits. Even within the individual states it does not remain the same. Thus far, however, the action of the Government is alike, not only throughout Prussia, but in all parts of Germany. It prevents absolutely the treatment of any forest of this class under improvident or wasteful methods; nor does it allow any measure to be carried into effect which may deprive posterity of the enjoyment which it has a right to expect. How far the details vary may be gathered from the fact that while in the Prussian provinces of Rheinland and Westphalia the village communities manage their own forests, subject only to a tolerably close oversight on the part of the controlling staff, in the former Duchy of Nassau, now Prussian territory, their share in the management does not extend beyond the right to sell the timber cut under the direction of the Government Oberförster, the right and obligation to pay for all the planting and other improvements which may be deemed necessary, and the rather hollow privilege of expressing their opinion. But however galling so extensive an interference with the rights of property may appear, it is none the less unquestionably true that in France, as well as in Germany, the state management of communal forests lies at the root of the prosperity of a very large proportion of the peasant population, and the evils which have attended its withdrawal in individual cases are notorious. While, on the one hand, villages whose taxes are wholly paid by their forests are by no means rare, on the other, the sale of communal forest-property in certain parts of Germany in 1848 has been followed with deplorable regularity by the impoverishment of the villages which were unwise enough to allow it.

The relations of the state to the third class of forests, those belonging to private proprietors, are of a much less intimate nature. The basis of the relations is, however, the same. To quote again from Donner, "The duty of the state to sustain and further the well being of its citizens, regarded as an imperishable whole, implies for the Government the right and the duty to subject the management of all forests to its inspection and control." But this intervention is to be carried only "so far as may be necessary to obviate the dangers which an unrestrained utilization of the forest by its owners threatens to incite, and the rights of property are to be respected to the utmost consistently with such a result." Prussia, of all the German countries, has respected these rights most highly, and the Government exerts practically no restraining influence except where the evident results of deforestation would be seriously dangerous. Here it may and does guard most jealously the woodlands which have been called in general "protection forests," of whose many-sided influence so much has of late been said and written in America.

The state leaves open a way of escape for the private proprietor who finds himself unwilling to suffer such restriction of his rights for the public good, and shows itself willing to buy up areas, not only of Protection Forest, but also of less vitally important woodlands. On the other hand, it is ready, with a broadness of view which the zeal of forest-authorities sometimes unfortunately excludes, to give up to private ownership lands which, by reason of their soil and situation, will contribute better to the commonwealth under cultivation than as forest. In this way the forests, whose preservation is most important, are gradually passing into the hands of the state; yet the total area of its woodlands is increasing but slowly.

The policy of state aid in the afforestation of waste lands, important through their situation on high ground or otherwise, is fully recognized, but the absence of considerable mountain chains has given to this branch of government influence very much less prominence than in the Alps of Austria, Switzerland and France, where its advantages appear on a larger and more striking scale.

In closing this brief sketch of forest-policy in Prussia it may be proper to refer briefly to the erroneous ideas of German

forest-management which have crept into our literature. They have done so, I believe, partly through a desire of the advocates of forestry to prove too much, and they injure the cause for which we are working, because they tend to make forest-management ridiculous in the eyes of our citizens. The idea has arisen that German methods are exaggeratedly artificial and complicated, and the inference has not unnaturally been made that forestry in itself is a thing for older and more densely populated countries, and that forest-management is inapplicable and incapable of adaptation to the conditions under which we live. It is true, on the contrary, that the treatment of German forests is distinguished above all things by an elastic adaptability to varying circumstances which is totally at variance with the iron formality which a superficial observation may believe it sees. It is equally true that its methods could not be transported unchanged into our forests without entailing discouragement and failure, just as our methods of lumbering would be disastrous over there; but the principles which underlie not only German, but all rational forest-management, are true all the world over. It was in accordance with them that the forests of British India were taken in hand and are now being successfully managed, but the methods into which the same principles have developed are as widely dissimilar as the countries in which they are being applied. So, forest-management in America must be worked out along lines which the conditions of our life will prescribe. It can never be a technical imitation of that of any other country, and a knowledge of forestry abroad will be useful and necessary rather as matter for comparison than as a guide to be blindly obeyed. Under these conditions I do not believe that forest-management in the United States will present even serious technical difficulties. It only asks the opportunity to prove itself sound and practical.

Switzerland is a country where the development rather than the actual condition of forest-policy may best claim our attention. The history of forestry in the Swiss republic is of peculiar interest to the people of the United States, because in its beginnings may be traced many of the chracteristics of the situation here and now, and because the Swiss, like the Americans, were confronted by the problem of a concrete forest-policy extending over the various states of a common union. The problem has been brilliantly solved, and not the least important result of its solution is the fact that the people of Switzerland have recognized the vast significance and importance of the forests in so mountainous a country, and a full and hearty appreciation and support of the forest-policy of the Confederation is found in every nook and corner of the land.

The history of the forest-movement in Switzerland has not yet been fully written. I may be allowed to quote from an unpublished sketch of it by Professor Landolt, who, more than any other man, has contributed to make that history of which he writes. As the example set by a republic to a republic, as the brilliant result of the work of a few devoted men, crowned by a public opinion which they created, and rewarded by the great and lasting blessing which they have brought to their country, our country can find no worthier model, no nobler source of encouragement and inspiration.

"Soon after the middle of the last century," begins Professor Landolt, "certain intelligent, public-spirited men of Zurich and the canton of Bern (which then included Waadt and a great part of Aargan) turned their attention to the situation of agriculture and forestry in Aargan. Their object was to gain a knowledge of the conditions involved, and their surroundings, and to remove the most pressing evils.

"In the years between 1780 and 1790, the cantons, following the lead of Bern, succeeded in appointing forest-officers, whose first task was to become conversant with the actual management of the state and large communal forests, and to make suggestions for their future treatment. Partly at this time, partly earlier, a large proportion of the state forests and a few communal forests were surveyed, and a few of them were marked off into compartments on the ground, a measure of vital importance to conservative management.

"The appointment of state forest-officers is to be regarded as the beginning of regular forest-management. Great numbers of forest-regulations bearing on the most various subjects, tree-planting among others, had been promulgated in former centuries. They had been often renewed, but without forest-officers they could not be enforced.

"Until about 1830 forestry in the less mountainous parts of Switzerland developed slowly, but still in a satisfactory manner. The mountain forests, however, with few exceptions, were in complete disorder. But the following years brought new life not only into politics, but also into national economies, and the status of the forest, which last was materially improved by the floods which spread in 1834 over the greater part of the Alps. The damage which they caused was so severe that the philanthropic and scientific societies set themselves the task of searching out the cause of inundations, which became more frequent as time went on. They concluded that it was to be found largely in the improvident destruction of the mountain forests. To the fear of a wood famine, which had hitherto been the chief incentive to the advancement of forestry, there was now added another, which, if not wholly new, still had been formerly little insisted on. It was the influence of forests on rainfall and the phenomena of nature in general. The societies did not fail to direct attention to this question, and with excellent result. The less mountainous cantons, with imperfect legislation, made new laws, or amended and completed the old ones, looked after the appointment of foresters, and took the organization of the felling, planting and care of their timber seriously in hand. But the chief gain lay in the fact that the mountain cantons applied themselves to the work."

Taken as a whole, forestry has made satisfactory progress as regards legislation, the improvement of forest-management and the increased number of forest-officers, since about 1840. In 1865 the Swiss Forest-school was established (as a fifth department of the Polytechnicum at Zurich), and "provision was thus made," says Professor Landolt, "for a forest-staff of our own, educated with special reference to our own conditions."

The Swiss Forestry Association was founded in 1843. Through frequent agitation, and by setting forth what action was necessary, it has rendered great services to the cause of forest-protection. It has moved successfully, among other things, for the foundation of a forest-school, the examination of the higher mountain forests, the passage of a new forest-law and the correction of the torrents.

In 1854 Professor Landolt called the attention of the Association to the investigation of the mountain forests. In 1858 the Federal Assembly appointed a commission of three men with authority to study and report upon the Swiss Alps and the Jura in regard to geology, forestry and police regulations bearing on water supply. From the appearance of the final report of this Commission in 1861 the improvement of Swiss forestry has been kept steadily before the Confederation. In 1875 a federal forest-inspector was appointed, and a year later the first Swiss forest-law was passed. This law does not extend to the whole of Switzerland, but only to the Alps and the steeper foot-hills. More recently attempts have been made by the Cantonal Government and the Forestry Association to extend its influence to the Jura or to the whole of Switzerland, but the need of such action is not yet clearly apparent.

The passage of the federal forest-law was followed almost everywhere immediately by the appointment of trained forest-officers, and all the cantons whose forest-legislation was defective amended or completed it.

"Our forest-laws," Professor Landolt goes on, "are intended to work more through instruction, good example and encouragement than by severe regulations. This method is somewhat slower than one which should involve more drastic uneasiness, but the results achieved are the more useful and lasting. Our laws require the same treatment for the forests of the state, the communes and other public bodies."

The oversight of private forests is less strict. Their owners may not reduce the area of their woodlands without the consent of the Cantonal Government; they must plant up the land cut over which is without natural growth, and they are bound to take proper care of the growing stock, but they are not held to a conservative management. In "protection forests," on the other hand, the timber that may be cut by private owners is marked out by Government officers, so that reckless lumbering may be prevented. The regulations which look to the formation of new protection forests must also be conformed to by private proprietors, or they must allow themselves to be expropriated. In these matters the Confederation and the cantons work in unison. The consent of the Federal Assembly is necessary to the clearing of private land in protection forests.

It hardly needs to be added that the present condition of forestry in Switzerland is admirable. Systematic forest-management has probably been known there as long as anywhere in Europe, and nowhere can finer individual examples be found. I have seen nothing, even in Germany, which seemed to me so workmanlike as the management of the Sihlwald, a forest belonging to the city of Zurich; and I am the bolder in my opinion because the Sihlwald (Garden and Forest, iii., pp. 374, 386, 397) has been called the most instructive forest of Europe by, perhaps, the most experienced forester of the present day.

New York. *Gifford Pinchot.*

Correspondence.

Tuberous Begonias.

To the Editor of GARDEN AND FOREST:

Sir.—Not every one who is familiar with the species and has watched the marvelous development of the hybrid Begonias will agree with all the views expressed in a recent article, entitled "Form in Flowers," in GARDEN AND FOREST. "Spoiling the flowers" is a familiar cry to the reader of horticultural literature, and we have had the same warning and very much the same arguments over all florists' flowers which those who are deploring the fate of the Begonias are now advancing. "Nature gives us the Ramanas and the Cherokee Rose, the florist produces Paul Neyron." So runs the complaint, and it seems a severe arraignment till the florist finds time to remark that besides Paul Neyron, his art has also produced La France, The Bride, Catherine Mermet and others which seem to have been overlooked in the course of the argument.

While there are certain ill defined canons of taste recognized among people of intelligence, yet practically we all decline to believe that anything which gives us pleasure has no beauty. I have no desire to enter into an unprofitable discussion on the beauty of form or the lack of it in the new Begonias, but simply wish to call attention to the conception of "Nature's Begonia," on which the argument is based. The type as Nature designed it, we are told, is a low dwarf plant with weak peduncles and small, drooping flowers of somewhat irregular outline. But taking the entire family of tuberous Begonias, of which there are about a score of species in cultivation, the combination specified is on the whole a rather rare one. The rule, if there is one, among the very diverse habits of these plants, is that the dwarf ones have stiff flower-stalks and the tall kinds weak ones, while there seem to be at least as many flowers of regular as of irregular shape. But most of our hybrids have been made from *B. Boliviensis*, *B. Pearcei*, *B. Veitchii*, *B. Davisii*, and in a smaller degree from *B. rosæflora* and *B. Clarkii*. *B. Boliviensis*, a tall plant, is responsible for the weak peduncles appearing so frequently in the hybrid Begonias, especially in the double varieties, the first of which were derived from that species. From a cultivator's point of view a flower on a low plant which has a peduncle so weak as to allow it to lie on the ground like a boy's sucker is not very desirable, and after supplying one's wants for hanging baskets, etc., such varieties are usually discarded by careful growers. There does not seem to be any inherent objection to trying to secure seedlings of the Davisii type with dwarf habit and fine flowers on stout, erect stems. We could hardly have too great an abundance of such pure colors, and if the flowers are sometimes rather large, this fault would regulate itself, for under ordinary treatment they are generally but little larger than those of some of the types. No doubt many inferior forms have been sent out, for every plant produces a salable tuber, and the margin of the florist is so small that he cannot be expected to throw away a plant so readily marketable. But after all, instead of assailing the hybridizer for lack of taste, why not encourage him in the production of what is new? Suppose some of the seedlings are not beautiful according to some ultra-Japanese standard, many of them will be sufficiently wayward and whimsical to suit the hyperæsthetical, and many more will delight those whose tastes are less highly educated, who can endure a regular flower and even admire a double Camellia.

Now is a good time to get some seed of one of these naughty hybridizers, for if sown at once they will commence to come into bloom in early June. The culture from seed is of the simplest. Use light soil, sow thinly on the surface and cover pan with glass. They will germinate in a fortnight, and even in the seed-leaf stage will stand considerable neglect. They should be dibbled out when small and kept growing at not too high a temperature. One can scarcely have too great a stock of these plants either for the garden or greenhouse.

Flatbush, L. I. *Quis.*

[If our correspondent will take the trouble to read again the article on which he comments, he will find not a word in disparagement of hybridizing. What the article maintained was: That increased size alone is not necessarily improvement; that a certain irregularity of outline which is pleasing in small flowers may be disagreeable when exaggerated in larger ones; that stiff perpendicular stems with a flower at the top, face upward, is no improvement on the graceful drooping habit of most Begonias, and that in many plants (not all) the single natural flowers are more beautiful than those which have been doubled by the gardener's art. "Quis" admits that "many inferior forms have been sent out," and we agree with him that the grower can hardly be expected to throw away marketable tubers. And yet it is well to insist now and then that flowers are not always beautiful merely because they are new or big or perfectly double.—ED.]

The Owl and the Sparrow.

To the Editor of GARDEN AND FOREST:

Sir.—Your pleasant correspondent, Charles Naudin, has some interesting notes on the *Stryx passerina*, a bird of whose existence I may as well confess my ignorance. The suggestion of any process which promises to aid in the extirpation of that admitted pest, the English sparrow, is alluring, but in avoiding Charybdis we often fall upon Scylla, and it occurs to me that our pigmy friend, who is, to quote Mr. Naudin's description, "a ferocious and well-armed bird," who "not only exterminates the sparrows' nests, but drives them away entirely by its presence alone from any locality," is a party to be respected certainly, but distrusted as to his ability or willingness to draw the line at English sparrows. I think your correspondent, who praises him possibly not too highly, would hardly care to "seal to such a bond" as would guarantee his discriminative powers in this respect. Like the writer, there are doubtless a few of your readers whose suburban experience, having a retrospect of something over half a century, includes, among other pleasant memories, recollections of countless mornings in years long past, which in one respect at least answered to Milton's beautiful description as "Sweet, with charm of earliest birds." That these are now mainly matters of reminiscence is largely due to the thoughtless and unfortunate introduction of the English sparrow. The diminished ranks of the native inhabitants of our orchards and hedge-rows are ill-conditioned to face a new marauder of the type Mr. Naudin describes, and it would seem to be the part of prudence to keep the Atlantic between us and the fierce little Chevêche until we are better informed as to his preferences and limitations. While we admire his valor, we may fairly question his discretion, and before making further reckless ventures we ought to be well assured, as between the English sparrow and the Chevêche, that this is not a case where "bad begins and worse remains behind."

West Roxbury, Mass. *W. H. C.*

[We have received letters containing the same warning from several correspondents, and should be glad to hear from others who have some knowledge of the habits of the Pigmy Owl.—ED.]

Recent Publications.

Outings at Odd Times. By Charles C. Abbott. New York: D. Appleton & Co.

Dr. Abbott has found another felicitous title for this latest addition to his series of out-of-door books. He saunters through upland and meadow, along woodside and brookside, to discover in every well-tramped highway and byway a freshness that never fails in the familiar forms of lowly life. The oftener he strolls among the familiar scenes where he has so often invited his readers to accompany him, the more thickly throng the surprises among the shrubs and weeds, the reptiles and insects, the birds and "small deer," for one who has eyes to detect them. And what Dr. Abbott sees he can weave into a narrative so entertaining that reading it is the next best thing to actually watching and witnessing in detail the modest events in the history which Nature keeps making day by day all the year long.

The book is so much in the vein of its predecessors that what has been so often said of their scope and quality will answer as a characterization of this one, and yet it differs somewhat in its flavor from the rest, and particularly from the earlier volumes of the series. It is less distinctly descriptive of our humble relatives and their ways and not so photographic in its delineation of what is seen. It is more contemplative. It treats the reader to musings on the more general laws of Nature. It is more subjective, too, and depicts the mood of the observer as often as the object mirrored in his mind. If, therefore, the reader finds fewer facts recorded he may detect more poetry; and since the book is not advertised as having merely or mainly a scientific value, he will not complain, and he may find the change not disagreeable.

Notes.

Small trees of *Araucaria excelsa* are largely used now in table decorations for large dinner parties.

Foreign journals state that the whole stock of a new Rose, Mamam Cochet, which last autumn was introduced by Charles Verdier, has been sold by him to an American, whose name is given as Mr. Ernest Asmus.

At Lafayette College, Easton, Pennsylvania, free tuition in road-building is now offered to one student from each county of the state. The instruction will be given by professors in the Engineering Department of the College.

A Stevia possessing an agreeable aromatic odor has been introduced to European horticulturists by Herr Dammann. It is a perennial, which grows only to a height of fifteen inches, is a strong bloomer, and is said to be more beautiful than any in common cultivation.

The annual report of Dr. J. A. Lintner, State Entomologist of New York, has been published, and as usual it is an important contribution to economic entomology. The illustrations are excellent, the index is complete, and the elaborate bibliography adds greatly to its value.

At the meeting of the Ohio State Horticultural Society a new Grape, raised by Mr. T. V. Munson, and said to be a cross between Lindley and Delaware, was pronounced very promising. The Colerain, a pure native seedling of the Concord type, and Nectar, a seedling, raised by the late Mr. Corywood, were also commended.

Professor Lazenby bagged some sweet cherries last year just after the fruit had set, and kept them covered until they were ready to pick. The fruit developed in this way was larger and heavier than that which remained uncovered, the skin was more tender, the general appearance particularly fresh, and the color notably brighter.

The *Bulletin of the Torrey Botanical Club* says that at a recent meeting of the club Miss Stabler "reported a peculiar growth of aërial roots in Swamp Maple as noticed by her at Great Neck, Long Island. The trees in several instances were decayed ten or fifteen feet above the ground, and roots one and a half inches in diameter had been sent out from above through this decayed growth to the ground, fifteen feet below."

Monsieur André, already distinguished by his explorations of the South American flora, made last year at the time of his visit to Montevideo an extended botanical excursion into northern Uruguay to the borders of Brazil, where virgin forests of the greatest interest were traversed, and where many trees were found of first-rate ornamental value for the future plantations of the parks and public gardens to be laid out in Montevideo under his direction. Among these there are many, he writes us, capable of embellishing the gardens of southern Europe. The results of these explorations are soon to be given to the public.

Professor George Lawson, of Halifax, in a private letter calls attention to the interesting fact that *Rhododendron Catawbiense* is likely to become naturalized in Nova Scotia. "It is nearly twenty years ago," he writes, "since I imported a few hundred Rhododendrons from Edinburgh. Many died; but all of the Catawbiense blood survived and have grown enormously. They seed very freely, and spontaneous seedlings are now seen peering out of mossy banks at long distances from my grounds. *Quercus sessiflora* is also spontaneous here with the Rhododendron from acorns of trees planted about the beginning of the century."

A "Hay Palace," recently built at Momence, Illinois, is described as being 206 feet in length and 166 feet wide in the centre. "The main hall is 103 feet in diameter, flanked on the four sides with wings. A circular gallery eighteen feet wide sweeps entirely around the main hall. The walls are built of baled hay, with just enough baled straw to make a pleasing contrast in shading and color. The primary object of the exhibition is to make a display of the varied products of eastern Illinois and western Indiana, which will include products of the farms, factories, forests, mines, quarries, and of the arts, domestic skill, and the accomplishments of the people of the district in music, oratory and manual training. A special feature is the display of the latest tools in haying machinery, and implements for ditching, laying and making tile, and road machinery."

A correspondent of the *American Architect and Building News* says: "Baton Rouge received its name from an enormous Cypress-tree which stood upon its site early in the eighteenth century, and out of which a certain carpenter once offered to build two boats of sixteen and fourteen tons respectively. The Cypress of Louisiana has bark of a reddish hue, grows to a great height, and is bare of branches excepting at the top. Naturally this particular Cypress was recognized among the pioneers and settlers as a landmark, and 'one of the first travelers who arrived at this locality,' says Le Page du Pratz, an old chronicler, 'exclaimed that this tree would make a fine stick' (a walking-stick for the Titans, presumably), 'hence the name of Baton Rouge (Red Stick), given to this place.'" The reference in this account is, of course, to the Bald Cypress (*Taxodium distichum*).

A writer in the *Illustrirte Gartenzeitung*, of Vienna, while disputing the excessive claims recently made for certain so-called "weather plants," points out the fact that a modest degree of power in forecasting atmospheric changes is possessed by a multitude of common plants. Among these he cites *Gallium vernum*, whose pleasant fair-weather odor becomes strong and pungent at the approach of rain; *Carlina vulgaris*, whose leaves close before rain; *Calendula pluvialis*, which predicts rain when its flowers remain closed after seven in the morning; *Oxalis acetosella*, which closes its leaves at the approach of rain or cold; *Lapsana communis*, which keeps its flowers open in the evening if it is to rain the following day, but closes them if fair weather is coming; *Draba verna*, which droops its leaves toward the ground before rain; and *Alsine media*, which predicts a clear day if its flowers open about nine o'clock, and a second one to follow if they remain open as late as four in the afternoon.

In his "Three Years in Western China" Mr. Alexander Hosie says: "Between Ch'ung-k'ing and Ch'i-chiang Hsien, the first city of any importance on the southern road to Kuei-chow, there are a number of factories for the manufacture of the ordinary coarse Chinese paper. . . . There is an entire absence of machinery for washing and shredding rags; there are no troughs of pulp, chemicals for bleaching, resin for watering, wire moulds for receiving and drums for firming the paper as it comes from the pulp-troughs. Bamboo-stems and paddy straw are steeped with lime in deep concrete pits in the open air and allowed to soak for months. When nothing but the fibre remains, it is taken out and rolled with a heavy stone roller in a stone well until all the lime has been removed. A small quantity of the fibre is placed in a stone trough full of water and the whole stirred up. A close Bamboo mould is then passed through the mixed fibre and water, and the film which adheres to it emerges as a sheet of paper, which is stuck up to dry on the walls of a room kept at a high temperature. The sheets are afterward collected and made up into bundles for market."

Mr. T. S. Brandegee distinguishes, in the November issue of *Zoe*, a new Poplar of Lower California under the name of *Populus Monticola*. It inhabits the high mountains of the Cape region in the extreme southern part of the peninsula, growing along streams and following down the cañons toward the warm lowlands. Young trees have a smooth, light colored bark similar to that of the Aspen, but it becomes very rough on old specimens. At elevations of five thousand feet it is rarely more than twenty feet high, but at lower altitudes it becomes a large tree nearly a hundred feet high, and is a favorite support for the wild Grape-vine. The wood is described as light red in color, and is said to be used in making furniture. The new growth is densely tomentose. The leaves are round-ovate, with a short point, variably sinuate-crenate or dentate, silky-pubescent upon both sides, especially upon the veins, with terete, white-tomentose petioles; the stipules are linear and the bud-scales white-silky; the capsules are ovate, densely white-silky tomentose, two to three-valved; styles usually two, united at the base, each with two narrow divisions. The disk is small and nearly flat; scales minutely sinuate-dentate, nearly glabrous. "This tree is known by the name of 'guerigo' to the inhabitants, who distinguish it from the common one of the fields and gardens called by them 'alamo.' The leaves and flowers appear in February, and in October all have fallen, a season of growth usual in Alta California, but very different from the ordinary habit of the plants of the Cape region of Baja California, where most of the vegetation comes forward with the summer and fall rains at the time when the cottonwoods are losing their leaves and appear to be preparing for a winter, which, however, never comes."

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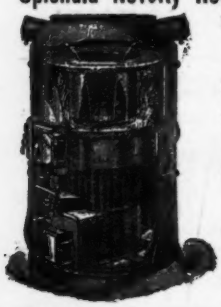

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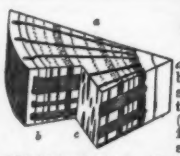

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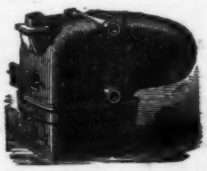

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